

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An ultrasonic transducer structure, comprising:
a first ultrasonic transducer element, arranged and operable for transmitting an ultrasonic signal from a front face of the structure;

damping material at the back of the first ultrasonic transducer element opposite the front face of the structure; and

a second ultrasonic transducer element in or on the damping material behind the first ultrasonic transducer element opposite the front face of the structure, arranged and operable to receive sound energy propagated through the damping material when the first ultrasonic transducer element is operated to transmit an ultrasonic signal from the front face.

2. (Currently Amended) An ultrasonic transducer structure as claimed in claim 1, comprising:

a plurality of first ultrasonic transducer elements, arrayed and operable for transmitting ultrasonic signals from a front face of the structure;

damping material at the back of each first ultrasonic transducer element; and

a plurality of second ultrasonic transducer elements in or on the damping material, arranged behind respective corresponding first ultrasonic transducer elements, each operable to receive sound energy propagated through the damping material when the corresponding first ultrasonic transducer element is operated to transmit an ultrasonic signal from the front face.

3. (Currently Amended) An ultrasonic transducer structure as claimed in claim 1, comprising:

a plurality of first ultrasonic transducer elements, arrayed and operable for transmitting ultrasonic signals from a front face of the structure;

damping material at the back of each first ultrasonic transducer element;

a second ultrasonic transducer element arranged in or on the damping material behind the array of first ultrasonic transducer elements, operable to receive sound energy propagated through the damping material when any first ultrasonic transducer element of the array is operated to transmit an ultrasonic signal from the front face.

4. (Previously Presented) An ultrasonic transducer structure as claimed in claim 1, wherein the or each first ultrasonic transducer element is a transmit/receive transducer element.

5. (Previously Presented) An ultrasonic transducer structure as claimed in claim 1, wherein the or each second ultrasonic transducer element is polyvinylidene fluoride film transducer element.

6. (Previously Presented) An ultrasonic transducer structure as claimed in claim 1, wherein the or each second transducer element is adapted to detect sound energy at signal frequencies in a lower frequency range, for example at frequencies in the range 2 to 3 MHz.

7. (Previously Presented) A method of monitoring the performance of an ultrasonic transducer structure, as claimed in claim 1, used for ultrasonic inspection of an object, wherein the or each second transducer element is operated to detect sound energy propagated through the damping medium from the or the corresponding first transducer element when that element is operated to transmit an ultrasonic signal from the front face of the structure, and signals provided by the or each second transducer element in correspondence to the detected sound energy are analysed, whereby the performance of the or each first transducer element is individually monitored.

8. (Previously Presented) A method as claimed in claim 7, wherein the or each second transducer element is operated to detect sound energy propagated through the damping medium from the or the corresponding first transducer element when that element is operated to transmit an ultrasonic signal from the front face of the structure in the course of inspection of an object,

whereby the performance of the or each first transducer element is individually monitored during inspection of the object.

9. (Previously Presented) A method as claimed in claim 7, wherein the or each second transducer element is operated to detect sound energy propagated through the damping medium from the or the corresponding first transducer element when that element is individually operated to transmit an ultrasonic signal from the front face of the structure in the course of testing routine, when object inspection is not being carried out.

10. (Cancelled)